DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-017798
Date Inspected: 14-Oct-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1900
OSM Departure Time: 700
Location: Shanghai, China

CWI Name:	See Below	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☑ Yes ☐ No ☐ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☐ Yes ☑ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: OBG

Summary of Items Observed:
CWI Inspectors: ABF: Mr. Shang Qing Quan, Mr. Li Shi You

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Bay 14

This QA Inspector observed floor beam FB3156-001 has handling damage and the pointed end that gets a CJP weld has a “U” shape bend of approximately 190 degrees. This floor beam has green tag #13039 attached to it. ABF representative Mr. Kelvin Cheung indicated this floor plate had previously been identified and “Red Tagged” along with floor beam FB3132-001 end plate as having been damaged. Kelvin said the red tag appears to have become detached from FB3156-001 and that he will follow up with an email to dayshift personnel to have a new red tag issued. See the photograph below for additional information.

This QA Inspector observed ZPMC welder Mr. Chen Chuanzong, stencil 044824 used flux cored welding procedure WPS-B-T-2132 to make OBG segment stiffener plate welds AP3003-001-081 and -082. This QA Inspector measured a welding current of approximately 310 amps, 30.5 volts and Mr. Chen Chuanzong appeared to be certified to make this weld. This QA Inspector observed the base materials were preheated with electric heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract

documents.

This QA Inspector observed ZPMC welder Mr. Hong Yong Li, stencil 044801 used flux cored welding procedure WPS-B-T-2232-TC-U4B-F to make OBG segment stiffener plate complete joint penetration welds AP3010-001-013 and -016 This QA Inspector measured a welding current of approximately 300 amps, 30.0 volts and Mr. Hong Yong Li appeared to be certified to make this weld. This QA Inspector observed the base materials were preheated with electric heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Jinjiu stencil 043661 used shielded metal arc process to tack weld the CJP weld joint that joins OBG segment 13CE deck plates SA3214-001 and DP3016-001. This QA Inspector observed Mr. Wang Jinjiu has a welding current of 160 amps and the base materials were preheated with a torch prior to commencement of welding. This QA Inspector observed the shielded metal arc welding electrodes were stored in an electrically heated electrode storage container and it appeared to be connected to the welding power supply cable. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Wang Min, stencil 044771 used submerged arc welding procedure specification WPS-B-T-2221-B-U2C-S to make OBG segment 13AE weld SEG3007AC-017. This QA Inspector measured a welding current of approximately 680 amps, 31.0 volts and Ms. Wang Min appeared to be certified to make this weld. This QA Inspector observed the base materials were preheated with electric heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Wang Lanying, stencil 045265 used submerged arc welding procedure WPS-B-T-2221-B-L2C-S-2 to make OBG segment 14W weld SEG3020AP-001. This QA Inspector observed a welding current of approximately 690 amps and 28.5 volts. Ms. Wang Lanying appeared to be certified to make this weld, and electrical heaters had been used to preheat the base material. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

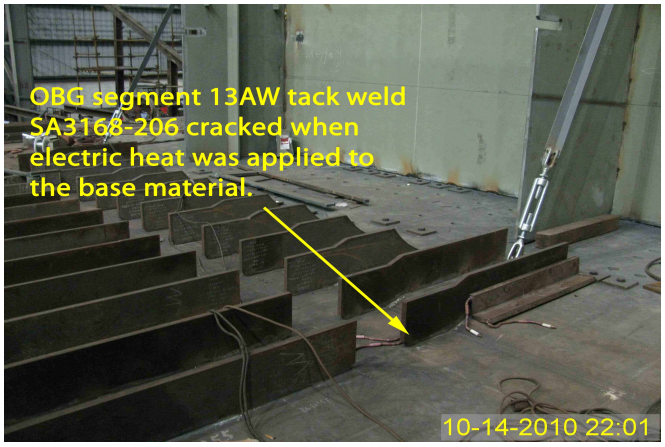
This QA Inspector observed ZPMC welder Mr. Xi Xianyou, stencil 047866 used flux cored welding procedure WPS-B-T-2132 to make OBG segment 13AW stiffener plate weld SA3168-255. This QA Inspector measured a welding current of approximately 300 amps and 30.0 volts. Mr. Xi Xianyou appeared to be certified to make this weld and the base materials were preheated with electrical heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC installed electrical heating elements adjacent to OBG segment 13AW stiffener plate welds SA3168-205 and SA3168-206. A few minutes later a loud “Bang” noise was heard and ABF CWI Mr. Li Shi You informed this QA Inspector that the tack welds on this stiffener plate had cracked as the plate was preheated. ABF representative Mr. Kelvin Cheung observed this crack and he informed this QA Inspector that the cracked tack weld will be ground out and the area will be inspected using the magnetic particle (MT) process. This QA Inspector observed ABF MT personnel inspecting several of the tack welds and four of the tack welds were identified by ABF MT personnel as having cracks. Mr. Kelvin Cheung said ZPMC will not repair these cracked tacks tonight and he will inform day shift of this problem. See the photograph below for additional information.

This QA Inspector observed ZPMC welder Mr. He Hanbi, stencil 202122 used flux cored welding procedure WPS-B-T-2132 to make OBG segment 13AW stiffener plate weld SA3168-197 and SA3168-198. This QA Inspector measured a welding current of approximately 300 amps and 30.0 volts. Mr. He Hanbi appeared to be certified to make this weld and the base materials were preheated with electrical heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Li Jun, stencil 051348 used shielded metal arc welding procedure WPS-345-SMAW-4G(4F)-FCM-Repair to make repairs of OBG segment 13CW weld SEG3015A-012. This weld had been ultrasonically rejected and weld repair document B-WR16130 had been issued to document this repair. This QA Inspector measured a welding current of approximately 140 amps, Mr. Li Jun appeared to be certified to make this weld and the welding electrodes were stored in a portable rod oven which was warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC positioned and tack welded OBG segment 13W plate SA3179 to floor beam FB3188A. ZPMC used a cutting torch to cut a small amount of material from the surface of the top slot to allow clearance between the top FB3188A “T” plate and SA3179. Prior to installation of SA3179 this area was then ground to remove the flame cut oxide surface. This QA Inspector observed ZPMC welder Mr. Rao Wei, stencil 049972 used shielded metal arc welding process to tack weld SA3179, FB3216, FB3219, other floor beams and temporary braces in OBG segment 13AW and 13BW. This QA Inspector measured a welding current of approximately 160 amps, Mr. Rao Wei appeared to be certified to make these welds, the welding electrodes were stored in a portable rod oven which was warm to the touch and the base materials were heated with a torch prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.



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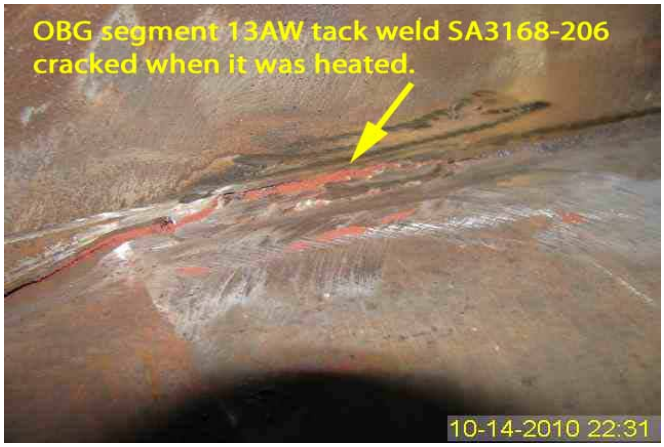

Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer